

Notice of Allowability

Application No.

09/910,477

Examiner

Khanh Tran

Applicant(s)

WRIGHT ET AL.

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on 01/12/2006.
2. ☒ The allowed claim(s) is/are 1-7, 10-15, 17-23 and 25-35, which are renumbered as set forth in the Office action.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date ____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

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1. The Amendment filed on 01/12/2006 has been entered. Claims 1-7, 10-15, 17-23 and 25-35 are pending in this Office action.

2. Claims are renumbered as shown below:

claims 10-25 renumbered as claims 8-13;

claims 17-23 renumbered as claims 14-20;

claim 26 renumbered as claim 21;

claim 25 renumbered as claim 22;

claim 27 renumbered as claim 23;

claim 35 renumbered as claim 24;

claim 28-34 renumbered as claims 25-31;

Response to Arguments

3. Applicant's arguments, see page 11, filed on 10/04/2005, with respect to claims 25-27 and 35 have been fully considered and are persuasive. The rejection of claims 24-25 has been withdrawn after Applicant amended claims.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

4. Claims 1-7 are allowed.

Regarding claim 1, claim is allowable over prior art of record because the cited references, taken individually or combination, fails to particularly disclose a waveshaping circuit that shapes a first waveform to decrease a ratio of peak power to average power in the first waveform such that an available power of a radio frequency power amplifier can be efficiently used, the waveshaping as set forth in the application claim. The closest prior art, Cova (US 6,141,390) disclosing predistortion in a linear transmitter using orthogonal kernels, either singularly or in combination, fail to anticipate or render the above limitations obvious.

5. Claims 10-15 are allowed.

Regarding claim 10, claim is allowable over prior art of record because the cited references, taken individually or combination, fails to particularly disclose a preconditioning circuit adapted to reduce an amplitude of a signal peak in an input symbol stream in real time, the preconditioning circuit as set forth in the application claim. The closest prior art, Cova (US 6,141,390) disclosing predistortion in a linear transmitter using orthogonal kernels, either singularly or in combination, fail to anticipate or render the above limitations obvious.

6. Claims 17-21 are allowed.

Regarding claim 17, claim is allowable over prior art of record because the cited references, taken individually or combination, fails to particularly disclose a method of

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shaping a first waveform to decrease a ratio of peak power to average power in the first waveform by digitally modifying data in a data stream that gives rise to the first waveform, where the shaping of the first waveform is substantially free from spectral pollution, the method comprising the steps as set forth in the application claim. The closest prior art, Cova (US 6,141,390) disclosing predistortion in a linear transmitter using orthogonal kernels, either singularly or in combination, fail to anticipate or render the above limitations obvious.

7. Claims 25-26 are allowed.

Regarding claim 26, claim is allowable over prior art of record because the cited references, taken individually or combination, fails to particularly disclose a method of adaptively controlling a digital waveshaping process, the method comprising uniquely distinct steps "receiving a reference information as a control input wherein the reference information is applied as a control parameter to a non-linear function that controls a hardness of limiting" and "updating a first parameter based, at least in part, on the at least one monitored input symbol stream and the control input where the first parameter is used to select an impulse that is applied to the input symbol stream to at least partially reduce the magnitude of a signal peak in the output of the waveshaping process". The closest prior art, Cova (US 6,141,390) disclosing predistortion in a linear transmitter using orthogonal kernels, either singularly or in combination, fail to anticipate or render the above limitations obvious.



8. Claims 27 and 35 are allowed.

Regarding claim 27, claim is allowable over prior art of record because the cited references, taken individually or combination, fails to particularly disclose a method of adaptively controlling a digital waveshaping process, the method comprising uniquely distinct steps "receiving a reference information as a control input" and "updating a first parameter based, at least in part, on the at least one monitored input symbol stream and the control input where the first parameter is used to select an impulse that is applied to the input symbol stream to at least partially reduce the magnitude of a signal peak in the output of the waveshaping process". The closest prior art, Cova (US 6,141,390) disclosing predistortion in a linear transmitter using orthogonal kernels, either singularly or in combination, fail to anticipate or render the above limitations obvious.

9. Claims 28-34 are allowed.

Regarding claim 28, claim is allowable over prior art of record because the cited references, taken individually or combination, fails to particularly disclose a method of digitally preconditioning an input symbol stream to a pulse-shaping filter in real time, the method comprising all the steps as set forth in the application claim. The closest prior art, Cova (US 6,141,390) disclosing predistortion in a linear transmitter using orthogonal kernels, either singularly or in combination, fail to anticipate or render the above limitations obvious.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Khanhcong Tran 01/20/2006
Examiner KHANH TRAN